STEYR CONTROL CENTER – Configuration software users manual

STEYR CONTROL CENTER – Configuration software users manual

Abbreviations *3*

Introduction *3*

Installation *4*

Microsoft ActiveSync **4**

STEYR CONTROL CENTER Configuration Software **4**

Application interface *5*

Main window **5**

Application menu **6**

Route window **7**

How to work with the application? *8*

STEYR CONTROL CENTER pool: **8**

What is configurable of a STEYR CONTROL CENTER? **8**

Handling with the user interface **8**

Saving changed data in the SCC pool **9**

Saving changed data of the "Connected SCC" **9**

Configure STEYR CONTROL CENTERs *10*

Adding a new grouping folder **10**

Adding a new STEYR CONTROL CENTER **10**

Configure a STEYR CONTROL CENTER 11

Configurable common SCC data 11

Elements below an SCC element in the route window 12

Adding a new I/O-Box to a STEYR CONTROL CENTER **13**

Configure a I/O-Box 13

Configurable common I/O-Box data 14

Elements below an I/O-Box element in the route window 14

Adding a new output to an I/O-Box **15**

Configurable output data 16

Changing the position of an output 17

Renaming an output 17

Adding a new sensor to an I/O-Box **17**

Configure a sensor 18

Configurable sensor data 18

Sensor type description 19

Calibration values 20

Changing the position of a sensor 22

Renaming a sensor 22

Working with the "Connected SCC" *23*

The "About SCCWinConfig" dialog *24*

Abbreviations

CAN	Controller Area Network	Serial communication protocol
I/O-Box	Input/Output box	Optional box to connect sensors and to switch loads.
SCC	STEYR CONTROL CENTER	
SCCWinConfig	STEYR CONTROL CENTER configuration software	this manual describes these software

Introduction

With the STEYR CONTROL CENTER Configuration software you can configure your STEYR CONTROL CENTERs. The configuration of the SCCs can be changed and stored in the STEYR CONTROL CENTER Pool on the hard drive or it's possible to configure directly a via Active Sync to the host computer connected SCC.
For archive or duplicate purpose you can copy the whole configuration of a connected SCC into the STEYR CONTROL CENTER Pool.
The configuration of stored or changed SCCs in the STEYR CONTROL CENTER Pool can be transferred to the connected SCC.

Installation

Microsoft ActiveSync

You need to install Microsoft ActiveSync to connect a STEYR CONTROL CENTER to the computer. This is necessary to access and change data from an SCC.
If ActiveSync is already installed on the computer and a connection to an SCC is possible, then you don't have to install ActiveSync again.

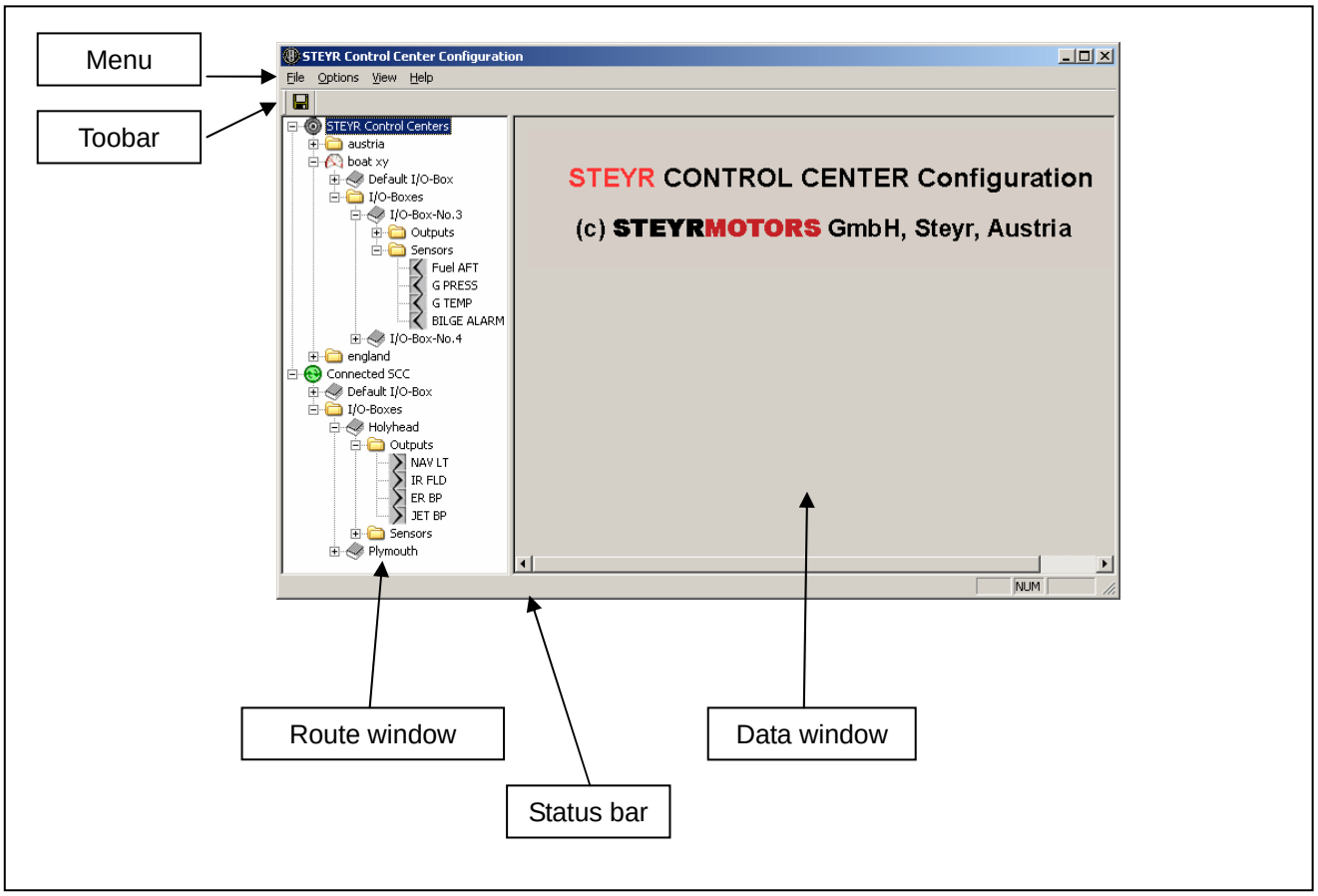
How to check, if a connection via ActiveSync between an SCC and the computer is possible?
In the ActiveSync connection settings enable the USB connections, power up the SCC and connect it with the USB cable to a free USB port of the computer. The connection wil be established automatically. Confirm the question; if you want to set up a partnership with the device, with no, a guest connection is enough to configure the SCC.

STEYR CONTROL CENTER Configuration Software

For installation simply run the setup program "InstallSCCWinConfig.msi" from the setup CD or download the newest version from the internet.
ATTENTION: uninstall any previous installed version before installing a new one!

Application interface

Main window



Picture 1: application window

Menu: application menu

Toolbar: with the save button changes are stored in the STEYR CONTROL CENTER Pool on the hard drive or the connected SCC is updated.

Route window: all stored SCCs and the connected SCC are listed in this area.

Data window: depending on which item is selected in the route window, all configurable values are shown in this area.

Status bar: in this line is a short description of selected menu or context menu entries shown.

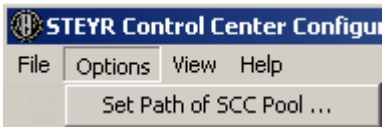
Application menu

Menu "File":

- "Save Ctrl+S": saves all changes onto the hard drive, if data in the SCC pool are changed or transfers changes to the connected SCC, if changes were made on the connected SCC
- "Exit": quits the application, if changes were made the application will ask to save them.

Menu "Option":

- "Set path of SCC pool …": sets the path on the hard drive where all SCC and grouping folders should be saved.



Menu "View":

- "Toolbar": shows or hides the toolbar
- "Status Bar": shows or hides the status bar

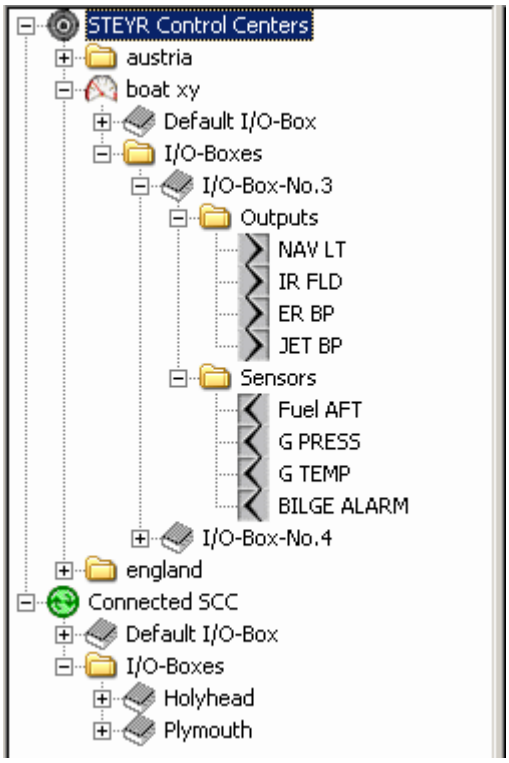
Menu "Help":

- "About SCCWinConfig …": shows version information

Toolbar:

- same as menu "File" -> "Save"

Route window



Symbols:

- Main element for the STEYR CONTROL CENTER Pool
- Grouping folder
- STEYR CONTROL CENTER
- I/O-Box
- Relay output
- Sensor input
- Via ActiveSync connected SCC

Picture 2: route window

Under the main element "STEYR Control Centers" it's possible to create grouping folders and STEYR CONTROL CENTERs. Grouping folders are useful to get a structure in the configured SCCs. Use these folders for example for customers, a boat configuration, places …
The second main element "Connected SCC" is only available if an SCC is connected via ActiveSync to the computer, this has the same functionality as an SCC which is stored in the pool.

How to work with the application?

STEYR CONTROL CENTER pool:

The SCC pool is a directory on the hard drive or a mounted network share. The pool consists of grouping folders and configured STEYR CONTROL CENTERs. Grouping folders can contain other grouping folders, STEYR CONTROL CENTERs or both.
By default the directory for the SCC pool is "SCCPool" under the installation path of the SCCWinConfig software. You can change the SCC pool directory with the menu item "Options" -> "Set path of SCC pool …".

What is configurable of a STEYR CONTROL CENTER?

- Time zone
- Gear ratio
- Propeller pitch
- Volume and alarm level of manual tank
- Unit values
- CAN behaviour
- Default I/O-Box
- I/O-Boxes

Handling with the user interface

Creating, deleting, renaming, copying or transferring objects (grouping folders, SCCs, I/O-Boxes, outputs or sensors) is done over the context menu when clicking with the right mouse button on an element in the route window.

When adding an object, the object is always added as a sub element from the selected element in the route window.

To change data of an object (SCCs, I/O-Boxes, outputs or sensors) select the corresponding element in the route window. After this, all configurable data are shown in the data window.
Important: when entering fraction of numbers always use the decimal point (e.g. "15.7")

Saving changed data in the SCC pool

After changes have been made the data must be saved (e.g. with menu "File" -> "Save") before quitting the application to store the changes permanently in the pool.
Some changes are stored immediately in the pool without the need to save them explicitly, these are:

- renaming a grouping folder or SCC
- deleting a grouping folder or SCC
- creating a new grouping folder or SCC
- copying an SCC

Saving changed data of the "Connected SCC"

Each change is done temporary on the hard drive, so you have to save your work (e.g. with menu "File" -> "Save") before quitting the application or disconnecting the SCC from ActiveSync. After saving, you must restart the STEYR CONTROL CENTER to take effect of the new settings. If you do not save the changed data and disconnect the SCC from ActiveSync or quit the application, all changes will be lost.

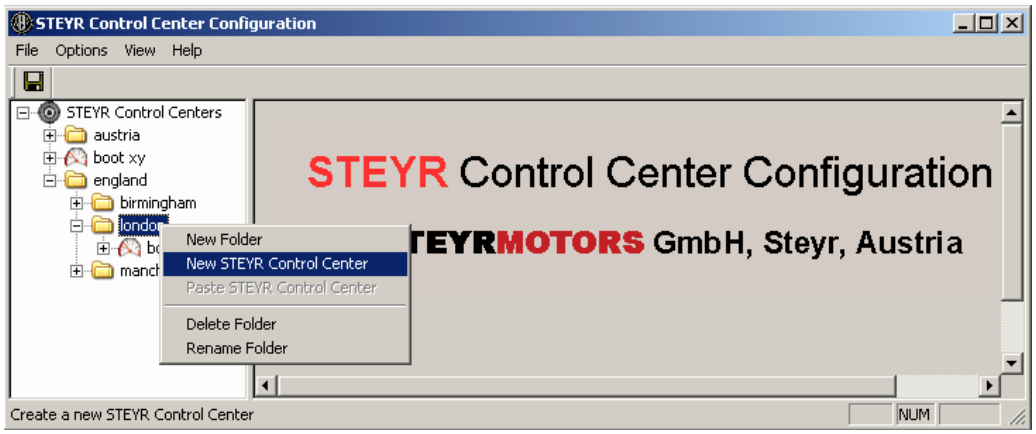
Configure STEYR CONTROL CENTERs

Adding a new grouping folder

Right click the "STEYR CONTROL CENTERs" element or another grouping folder in the route window, in the following context menu select "New Folder" and input a name for it.

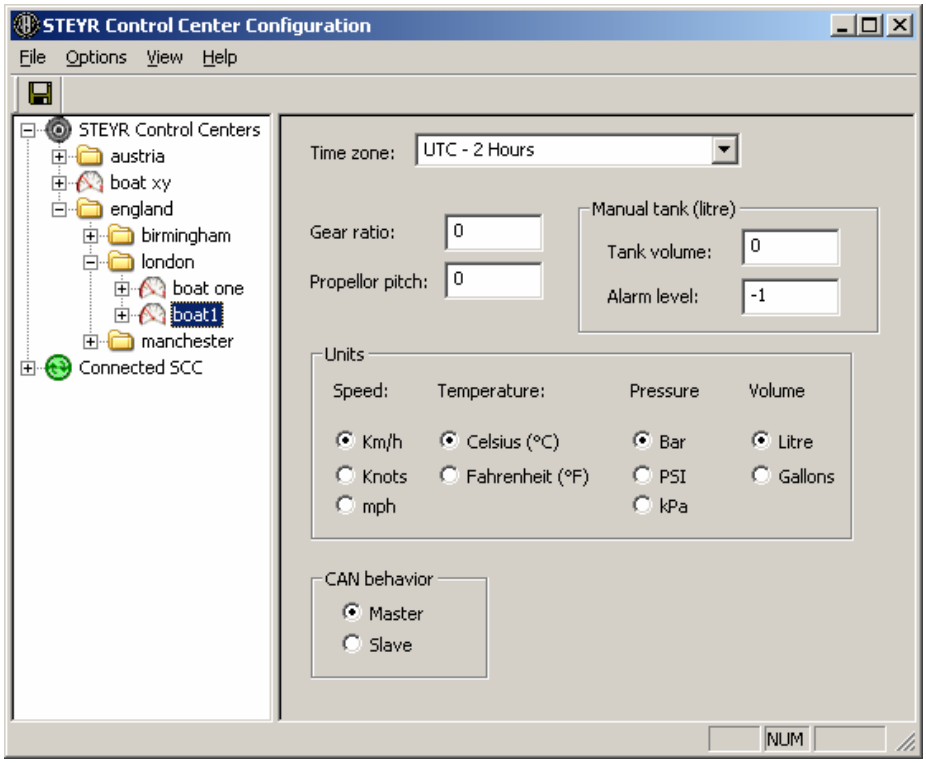
Adding a new STEYR CONTROL CENTER

Right click the "STEYR CONTROL CENTERs" element or a grouping folder in the route window, in the following context menu select "New STEYR CONTROL CENTER" and input a name for it. After confirming the "Enter name" input box with "OK" the new SCC will be added with default configuration settings.



Picture 3: create a new SCC

Configure a STEYR CONTROL CENTER



Picture 4: configurable data of an SCC

When selecting an SCC in the route window you can configure data as shown in the above picture.

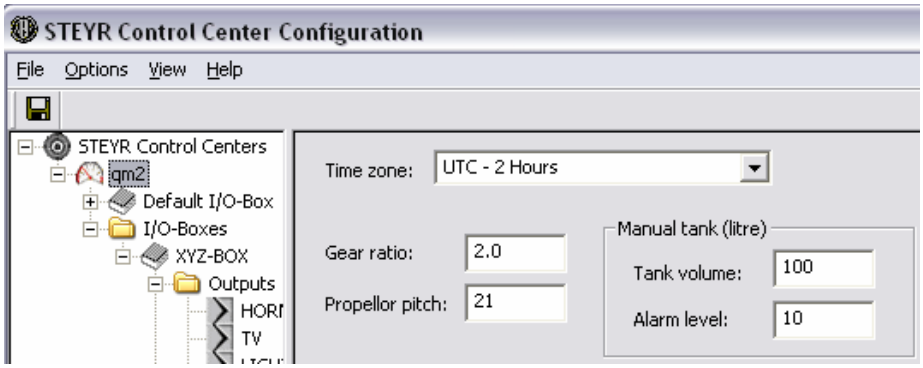
Configurable common SCC data

- **Time zone:** when a GPS sensor is connected to the STEYR CONTROL CENTER then the time zone must be configured, because the received GPS time is UTC time.
  Allowed values: all values from the drop down list
- **Gear ratio:** to calculate the theoretical speed and the corresponding slip value, this value is required **(i.e. 2.1)**
  Allowed values: any positive decimal number
- **Propeller pitch:** this value is needed for the same reason as the gear ratio
  Allowed values: any positive decimal number **(i.e. 20")**
- **Tank volume:** tank volume of the manual tank
  Allowed values: any positive integer
- **Alarm level:** level, when the SCC should show a warning if the actual contents of the manual tank falls below this threshold.

Allowed values: any positive integer and "-1". If "-1" then no alarm level is configured.

- **Units:** unit which is shown for speed, temperature, pressure or volume values in the SCC software
  Allowed values: any selection
- **CAN behaviour:** it is possible to connect more than one SCC on the same CAN line at different places, e.g. to view engine or sensor data or to switch an I/O-Box relay output from different locations on a boat. At start up the "Master SCC" initializes the I/O-Boxes and "Slave SCCs" with important values for the CAN communication and this is only allowed from just one "Master SCC". So, for a functional communication between the engine, SCCs and I/O-Boxes it's necessary to have just one "Master SCC" and any number (zero is also possible) of "Slave SCCs".
  Allowed values: see description above

Elements below an SCC element in the route window

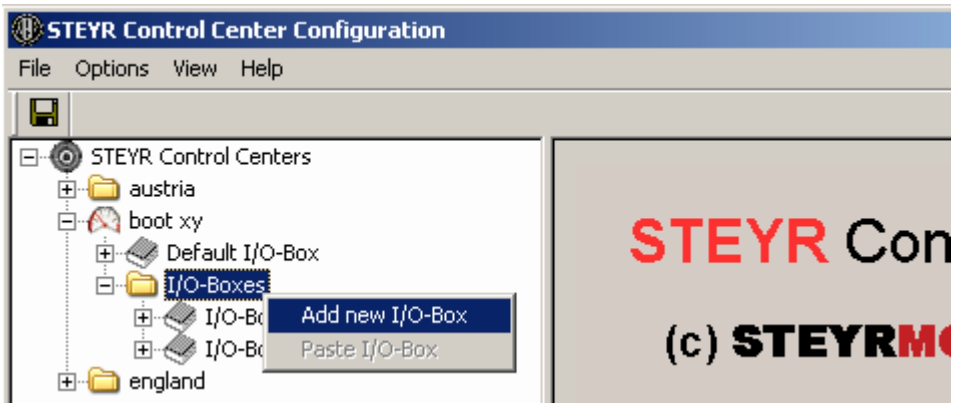


Picture 5: elements below SCC element

- "Default I/O-Box":
  Each SCC has a "Default I/O-Box" member, which can be configured like a normal I/O-Box except for the serial number. This configuration will be used if an SCC recognizes a new or unknown I/O-Box. SCC's recognize the I/O-Boxes by there serial number.
  Recommended configuration: when using only one I/O-Box, configure the "Default I/O-Box" equal to the connected one. The advantage is, when you change the I/O-Box due to a defect, you don't have to set up the new one.

- "I/O-Boxes":
  The "I/O-Boxes" folder can contain an unlimited number of configured I/O-Boxes which the STEYR CONTROL CENTER knows.

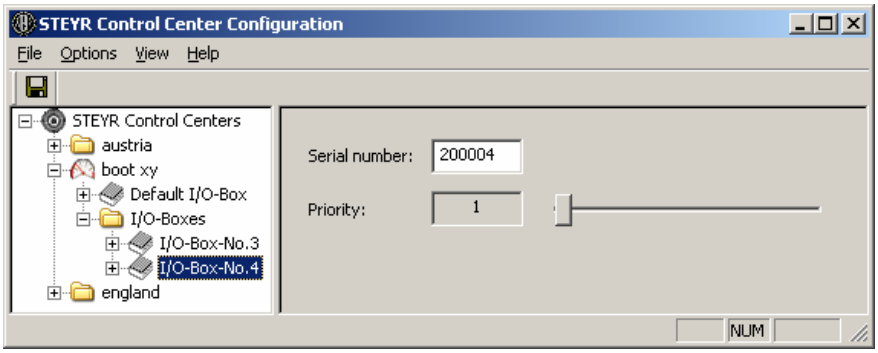
Adding a new I/O-Box to a STEYR CONTROL CENTER



Picture 6: Add a new I/O-Box

Right click the "I/O-Boxes" folder of the STEYR CONTROL CENTER where you want add a new I/O-Box in the route window, in the following context menu select "Add new I/O-Box" and input a name for it. After confirming the "Enter name" input box with "OK" the new I/O-Box will be added with default configuration settings (from the "Default I/O-Box"). After this enter a correct serial number for the new I/O-Box because zero is not allowed.

Configure a I/O-Box



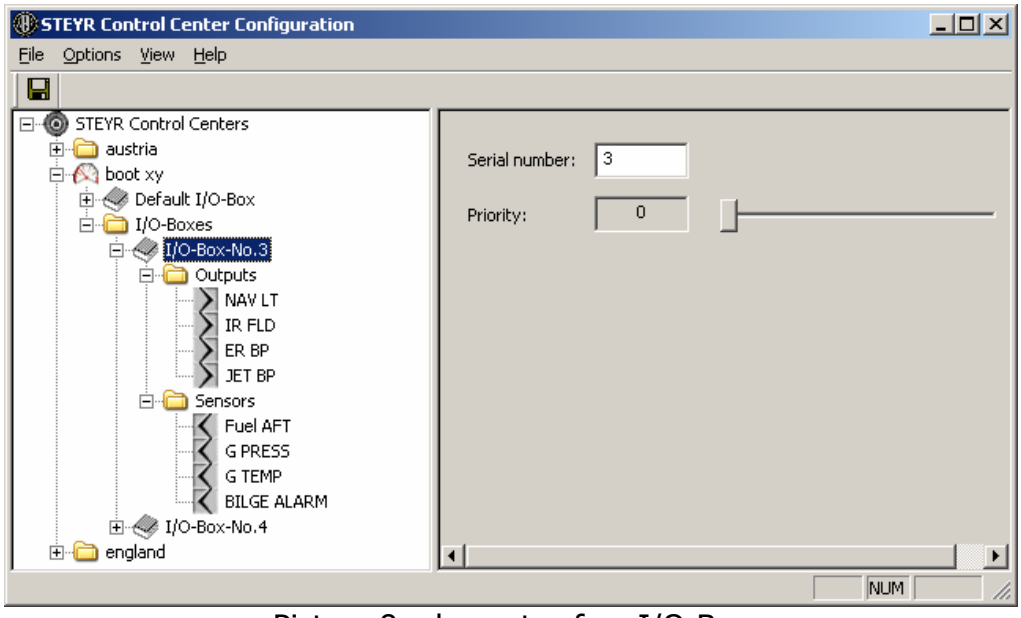
Picture 7: configurable data of an I/O-Box

When selecting an I/O-Box in the route window you can configure data as shown in the above picture.

Configurable common I/O-Box data

- **Serial number:** serial number of the I/O-Box for which this configuration is valid. This number is **very important**, because the STEYR CONTROL CENTER recognizes the connected I/O-Boxes through there serial numbers. According to the serial number the SCC knows which configuration it should take to calculate and show data from the I/O-Box.
  The configuration of an I/O-Box is always stored on the SCC and not in the I/O-Box itself. The only thing which is permanently programmed into the I/O-Box is its serial number.
  Allowed values: any positive integer except zero
- **Priority:** when more than one I/O-Box is connected to the STEYR CONTROL CENTER, the priority defines the order of the recognized I/O-Boxes in the I/O-Box view of the SCC software. Null means the highest priority and 255 the lowest. The order is random if two ore more I/O-Boxes have the same priority.
  Allowed values: any slider position

Elements below an I/O-Box element in the route window

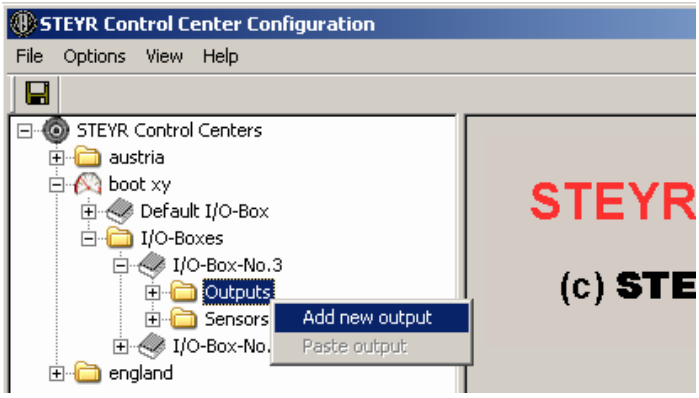


Picture 8: elements of an I/O-Box

- "Outputs":
  The "Outputs" folder contains the configured relay outputs of an I/O-Box. The order of the outputs in the route window is important, because it represents the pinning on the I/O-Box output connector. The first output in the route is the first relay place on the output connector (Pin 1 and Pin 12) of the I/O-Box, the second output is the second relay place, etc. (for a connector description of the I/O-Box see the SCC technical documentation)

- "Sensors":
  The " Sensors" folder contains the configured sensor inputs of an I/O-Box. The order of the sensors in the route window is important, because it represents the pinning on the I/O-Box sensor connector. The first sensor in the route is the first sensor input place on the sensor connector (Pin 1 and Pin 8) of the I/O-Box, the second sensor is the second sensor input place, etc. (for a connector description of the I/O-Box see the SCC technical documentation)

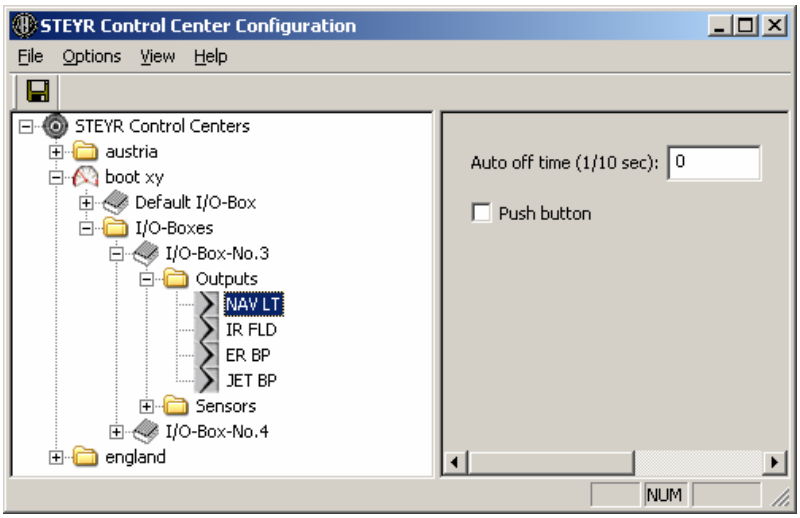
Adding a new output to an I/O-Box



Picture 9: Add a new output

Right click the "Outputs" folder of the I/O-Box where you want to add a new output in the route window, in the following context menu select "Add new output" and enter a name for it. After confirming the "Enter name" input box with "OK" the new output will be added with default configuration settings.
Maximally four outputs are permitted.

Configure an output



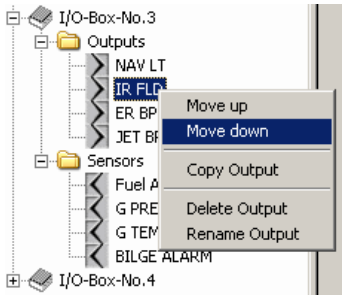
Picture 10: configurable data of an output

When selecting an output in the route window you can configure data as shown in the above picture.

Configurable output data

- **Auto off time:** duration after which time an active output is switched off automatically. Attention: the unit of this value is 1/10 seconds (e.g. a value of "100" means ten seconds).
  Allowed values: any positive integer. Zero means no automatic switch off
- **Push button:** when checked the button in the I/O-Box view of the SCC software is a push button. That means, that an output is only switched on when the button is pressed in the SCC software.
  When "Push button" is not checked the output is like a normal switch.

Changing the position of an output



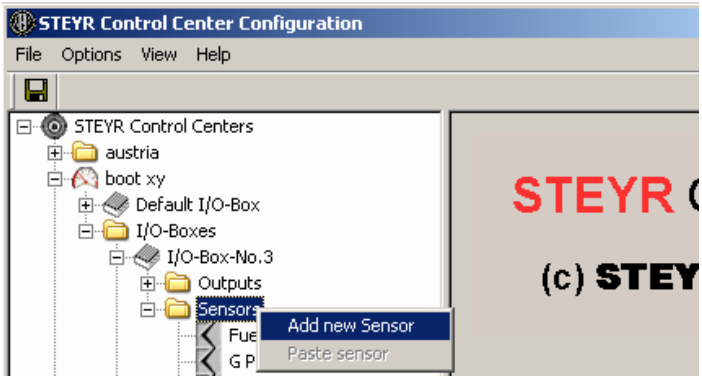
Right click the output element in the route window from which you want change the position, in the following context menu select "Move up" or "Move Down". Repeat this step until the output is placed correctly.

The top position is the top left button in the STEYR CONTROL CENTER,
one below top is for top right button, 3 rd from top is bottom left and bottom position is the bottom right button on the display.

Renaming an output

Right click the output element in the route window of which you want change the name, in the following context menu select "Rename output".
The name of an output is equal to the label of the corresponding button in the SCC software.

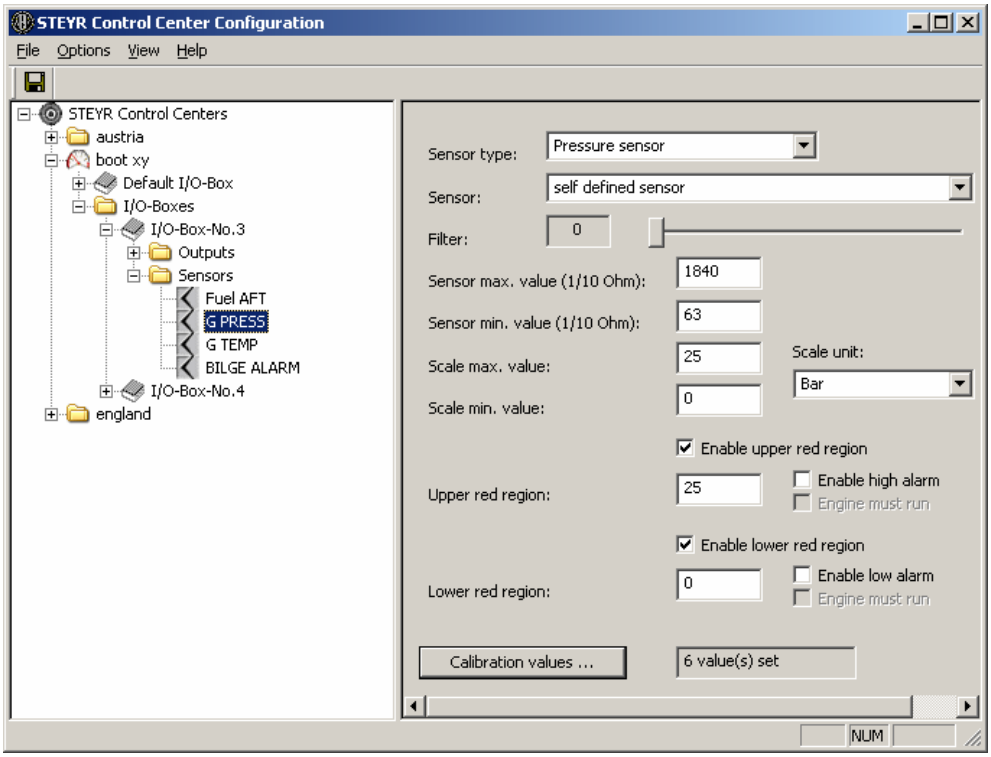
Adding a new sensor to an I/O-Box



Picture 11: Add a new sensor

Right click the " Sensors" folder of the I/O-Box where you want add a new sensor in the route window, in the following context menu select "Add new sensor" and input a name for it. After confirming the "Enter name" input box with "OK" the new sensor will be added with default configuration settings.
Maximally four sensors are permitted.

Configure a sensor



Picture 12: configurable data of a sensor

When selecting a sensor in the route window you can configure data as shown in the above picture.

Configurable sensor data

- **Sensor type:** see sensor type description below
- **Sensor:** in this drop down list you can find all predefined sensors of the selected sensor type. When selecting any predefined sensor all data except the red region parts are filled out.
  When selecting the "self defined sensor" entry from the drop down list, it's possible to configure all values from the sensor yourself.
- **Filter:** number of measured sensor values to calculate an average value. This is useful for a sensor which has a huge fluctuation (e.g. tank level sensors). The average value is shown in the corresponding instrument in the I/O-Box view of the SCC software. The I/O-Box measures and sends the sensor values approximately every second, so a filter value from max. five is recommended.
  Allowed values: any slider position. Zero and one means no filter is used, the sensor values are shown directly in SCC software.

- **Sensor max. value:** resistance of the sensor when it reaches the highest possible scale value. Attention: the unit of this value is 1/10 ohm (e.g. a value of "1000" means 100 ohms).
  Allowed values: positive integer 0 - 65535
- **Sensor min. value:** resistance of the sensor when it reaches the lowest possible scale value. Attention: the unit of this value is 1/10 ohm (e.g. a value of "1000" means 100 ohms).
  Allowed values: any positive integer 0 - 65535
- **Scale max. value:** value which is shown in the instrument at the end of the scale.
  Allowed values: integer -999 - +999
- **Scale min. value:** value which is shown in the instrument at the start of the scale.
  Allowed values: integer -999 - +999
- **Scale unit:** unit of the values "Scale max. value" and "Scale min. value". Attention: this is not the unit which is shown for the instrument in the SCC software. The instrument unit is configured in the common SCC settings. The scale unit is needed for a conversion into the different shown units.
- **Enable upper red region:** enables the possibility to configure an upper red region and a high alarm warning.
- **Upper red region:** scale value at which the upper red region should start.
  Allowed values: interger, value must be lower than "Scale max. value" and greater than "Scale min. value".
- **Enable high alarm:** if enabled, a warning popup appears on the SCC when the sensor value is greater than the "Upper red region" value.
- **Engine must run:** if enabled, the high alarm warning appears only when the sensor value is greater than the "Upper red region" value and the engine is running.
- **Enable lower red region:** enables the possibility to configure a lower red region and a low alarm warning.
- **Lower red region:** scale value at which the lower red region should end.
  Allowed values: interger, value must be lower than "Scale max. value" and greater than "Scale min. value".
- **Enable low alarm:** if enabled, a warning popup appears on the SCC when the sensor value is lower than the "Lower red region" value.
- **Calibration values:** see "Calibration values" below

Sensor type description

Possbile sensor types are:

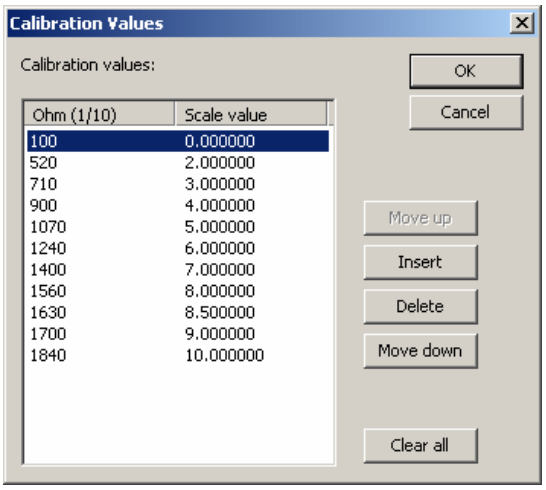
- Empty sensor place:
  When "Empty sensor place" is selected, then the corresponding sensor place in the I/O-Box view of the SCC software is empty. This is needed when the sensor place on the I/O-Box connector is not used.

- Fuel sensor:
  Fuel level sensor for tanks. Sensors of this type can be selected as used tank sensor in the tank view of the SCC software
- Temperature senor:
  Temperature sensors
- Pressure sensors:
  Pressure sensors
- Digital sensors:
  Digital sensors are sensors which have only two states, on and off like a switch. The only thing you can configure with a digital sensors is:
  * a high alarm warning when the switch is closed (null ohm)
  or
  * a low alarm warning when the switch is opened (∞ ohm)

  Predefined digital sensor "Screen off mode":
  If this sensor is selected and the corresponding sensor switch is closed, then the display backlight of the SCC is switched off. When the sensor switch is opened the backlight is turned on again.
- Common sensor:
  Sensors with no special type

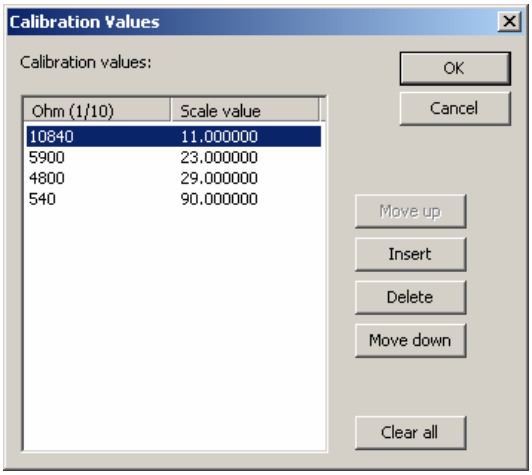
Calibration values

Calibration values are necessary to define non linear sensors.
When defining sensors without any calibration values, then the scale value is calculated with the linear interpolation method between the sensor min. and max. value.
Calibration values are always two values: the resistance value of the sensor and the corresponding scale value. This pair of values defines a point in the sensor curve. A sensor can have an unlimited number of calibration values.
Attention: when defining a calibration value pair, the resistance value must be given in 1/10 ohm.



Picture 13: calibration values input dialog

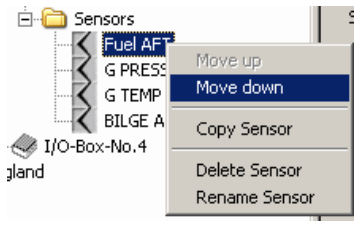
The order of the values listed in the calibration values dialog is very important: the calibration value pair with the lowest scale value has to be at the top, at the bottom of the list the value pair with the highest scale value. The list is ordered from the lowest scale value to the highest scale value. The lowest or highest scale value of the calibration values may not be the same as the scale min. or max. It's also possible to start and end with the calibration values somewhere in the middle of the sensors scale bandwidth.
In the picture above you see a sensor with the behaviour: when the resistance of the sensors goes up the scale value goes up too. There are also sensors, like temperature sensors (NTC's), with the opposite behaviour: when the resistance goes up the scale value falls (see the picture bellow).



Picture 14: raising resistance – falling scale value

<u>Attention:</u> when defining calibration values, you must always define them in the right order.

Changing the position of a sensor



Right click the sensor element in the route window of which you want change the position, in the following context menu select "Move up" or "Move Down". Repeat this step until the sensor is placed correctly.

The top position is the top middle instrument in the STEYR CONTROL CENTER, one below top is for the bottom left instrument, 3 rd from top is bottom middle and bottom position is the bottom right instrument on the display.

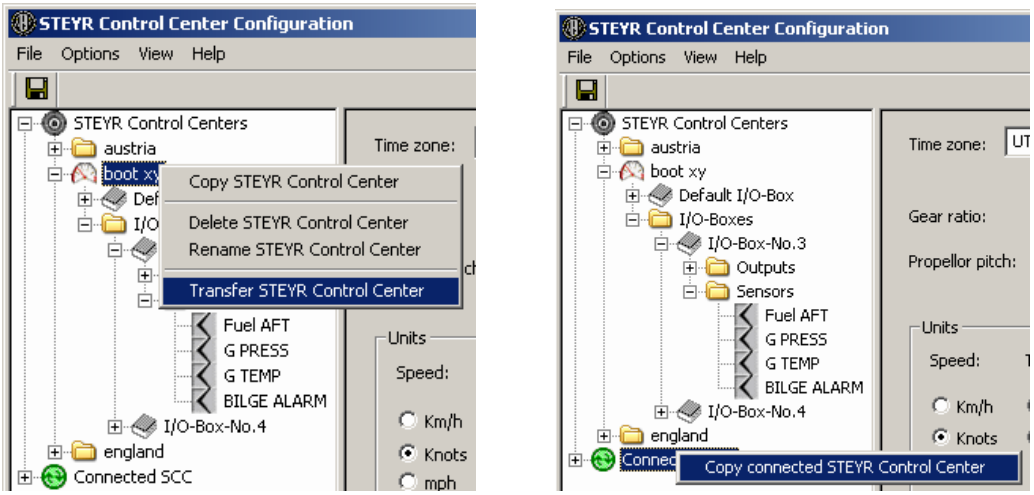
Renaming a sensor

Right click the sensor element in the route window of which you want change the name, in the following context menu select "Rename sensor".
The name of a sensor is equal to the label of the corresponding instrument in the SCC software.

Working with the "Connected SCC"

Change the connected SCC directly:
When a STEYR CONTROL CENTER is connected to the host computer via ActiveSync you see the element Connected SCC in the route window. You can configure the connected SCC like a normal SCC which is saved in the pool. When you are finished with the configuration don't forget to save (menu "File" -> "Save") your work. When disconnecting the SCC from the host computer without saving, you will lose all your configuration changes.
After saving changes of the connected SCC, you have to perform a restart of the SCC to take effect the new configuration.

Transfer the configuration of an SCC in the pool onto the connected SCC:
After you have finished the configuration of SCCs in the SCC pool, you may want to transfer the settings from an SCC inside the pool onto the connected SCC. This is easily done by selecting with the right mouse button on the relevant SCC in the pool and selecting in the following context menu "Transfer STEYR CONTROL CENTER". The entry "Transfer STEYR CONTROL CENTER" is only available if an SCC is connected to the host computer via ActiveSync.

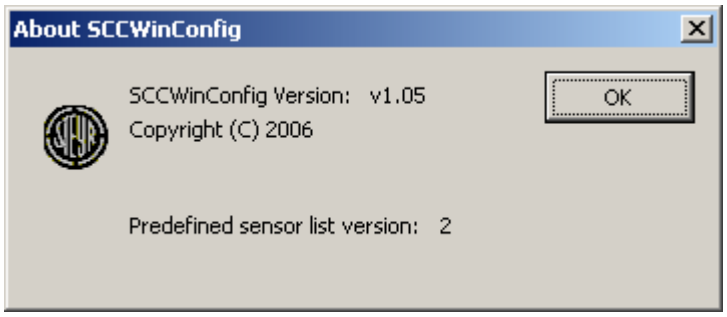


Picture 15: Transfer to connected SCC and copy connected SCC

Copying the connected SCC into the SCC pool:
To store the connected SCC inside the SCC pool, right click the "Connected SCC" element in the route window and select "Copy connected STEYR CONTROL CENTER". Now right click a grouping folder or "STEYR CONTROL CENTERs" and select "Paste STEYR CONTROL CENTER", enter a name for the SCC and confirm the box with "OK". The configuration of the connected SCC is saved below the folder where you have selected "Paste STEYR CONTROL CENTER".

The "About SCCWinConfig" dialog

To obtain version information of the application and the available predefined sensors, select menu "Help" -> "About SCCWinConfig…".



Picture 16: "About SCCWinConfig" dialog